separate from the insulating support, the uppermost portion of the conductor plane which in the completed sensor constitutes the resiliently movable loop 3.--

The paragraph beginning at line 1 of page 12 is to be replaced by the following rewritten paragraph:

--This may be accomplished by the upper partial layer 10 of the intermediate insulator consisting of silicon dioxide or silicate glass and a lower partial layer 11 consisting of Si_3N_4. The windows in the passivation layer 12 which also consists of Si_3N_4, which have been structured with the above-mentioned additional lacquer mask prior to the isotropic undercutting, serve as an etching mask.--

In the claims:

Please amend claim 1-15, 21, 22, 24-26 as follows:

1. (Amended) An apparatus for measuring viscosity of a medium with a micromechanical measuring facility and electronic systems for measuring, transducing, and analyzing signals, with the following features:

a measuring zone integrated on a mechanically stable substrate is freely accessible or enclosed within a measuring chamber with pores or openings for diffusive or convective mass transport, the measuring zone containing two or more closely spaced conductors of which at least one is connected to a controllable current source or HF voltage source and of which at least one is completely or partially cantilevered from a suspension into the measuring zone, the position of the cantilevered conductor(s) being defined within the measuring zone by the resiliency of the suspension or their/its inherent resiliency and by voltage-dependent, or current-dependent electrical or magnetic attraction, or repelling forces, which can be changed by said HF voltage source or current source, and the measuring zone containing an integrated measuring device for detecting a viscosity-dependent change in position of the conductor(s) in

response to changes of said attraction or repelling forces.

2. (Amended) The apparatus of claim 1, wherein the substrate comprises a semiconductor material and contains integrated circuits for detecting the position or change in position of the cantilevered conductor(s), and/or for the signal transduction, and/or the signal export, and/or for the controllable current or HF voltage sources.

3. (Amended) The apparatus of claim 1, wherein an integrated loop or flat coil and the cantilevered conductor(s) are arranged on the substrate at the measuring zone, the cantilevered conductor(s) being suspended from the substrate at two or more points within the measuring zone.

4. (Amended) The apparatus of claim 1, wherein the substrate is formed as a bar-shaped, thin tip at the measuring zone.

5. (Amended) The apparatus of claim 4, wherein the measuring zone is separated from the medium to be analyzed by a dialysis membrane forming a measuring chamber filled with a macromolecular sensitive fluid, the components of which cannot penetrate the dialysis membrane and the viscosity of which is determined by reversible affinity bonds between polymer substances and can be changed by the concentration of one or more analyte molecules for which the dialysis membrane is permeable, wherein the maximum spacing between the sensitive fluid volume confined by the dialysis membrane and the substrate is .5 mm.

6. (Amended) The apparatus of claim 5, wherein the bar-shaped, thin tip with the measuring zone is positioned in and partially fills the lumen of a dialysis hollow fiber for forming a measuring chamber the region between hollow fiber

membrane and substrate.

7. (Amended) The apparatus of claim 6, wherein the cantilevered conductor(s) consist(s) of thin metal wires and wherein the resilient resistance of the conductor(s) against the field-induced force is mainly based on the torsion of said wires.

8. (Amended) The apparatus of claim 7, wherein the cantilevered conductor(s) is/are arranged in the field of a permanent magnet such that the field is directed perpendicularly relative to the conductor(s) and to their/its main direction of movement and wherein the conductor(s) is/are connected to a controllable current source.

9. (Amended) A method of measuring viscosity with a device according to claim 8, wherein the change in the position of the cantilevered conductor(s) relative to the substrate or another conductor is induced by a change of the electrical HF field or of the magnetic field intensity and the viscosity dependent velocity or extent of the change in position induced by a preferably high frequency capacity or impedance measurement or by a frequency-shift of an HF-oscillator.

10. (Amended) The method of measuring viscosity of claim 9, wherein the viscosity-dependent amplitude of the measured change in position of the cantilevered conductor(s) is evaluated at a suitable modulation or switching frequency of the HF field affecting the conductor(s) or of the current flowing in the conductor(s) or as function of the modulation or switching frequency.

11. (Amended) The method of measuring viscosity of claim 9, wherein the strength or direction of the magnetic force or the strength of the electrostatic

force acting on the cantilevered conductor(s) is/are abruptly changed by the control of the current- or HF voltage source, and subsequently, the viscosity-dependent change in position of the conductor(s) is/are measured as a function of time.

12. (Amended) A method of making a device for measuring viscosity according to claim 8, wherein after completion of all active and passive components of the viscosity measuring device on a suitable semiconductor substrate (including the integrated conductors), an additional photolithographically structured soft mask is applied for a localized isotropic insulation etching process on the parts of the uppermost conductor layer for forming the cantilevered conductors and wherein the parts of the uppermost conductor layer are undercut by etching and completely separated from corresponding sections of an insulating base by the localized isotropic insulation etching process.

13. (Amended) The method of claim 12, wherein a layer intermediate the uppermost conductor layer and a lower conductor is dielectric and consists of at least two layers of different chemical compounds, and wherein the lower part of the intermediate layer is immune from the etching process for the isotropic undercutting of the upper conductor path.

14. (Amended) The method of claim 13, wherein the upper part of the intermediate layer consists of silicon dioxide or silicate glass and one of the lower partial layers consists of Si_3N_4.

15. (Amended) An apparatus for measuring the viscosity of a fluid, comprising:

a substantially rigid support;

an extension protruding from the support and provided with a first conductive path;

a cantilever member comprising a second conductive path extending over the first conductive path and resiliently biased to a first position spaced therefrom;

means for cyclically energizing at least one of the first and second conductive paths for moving the cantilever member to a second position; and

means for detecting the rate of return of the cantilever member to its first position to derive a value representative of the viscosity.

21. (Amended) The apparatus of claim 15, wherein the at least one of first and second conductive paths is adapted to be energized by direct current.

22. (Amended) The apparatus of claim 15, wherein the at least one of first and second conductive paths is adapted to be energized by high frequency voltage.

24. (Amended) A method of measuring the viscosity of a fluid, comprising the steps of:

providing a substantially rigid member with a first conductive path therein;

providing a resiliently flexible member having a second conductive path therein biased into a first position spaced from the first conductive path;

subjecting the rigid and flexible members to the fluid;

energizing at least one of the first and second conductive paths to move the flexible member to a second position; and

measuring the rate of movement of the flexible member to derive therefrom a value representative of the viscosity.

25. (Amended) The method of claim 24, wherein at least one conductive